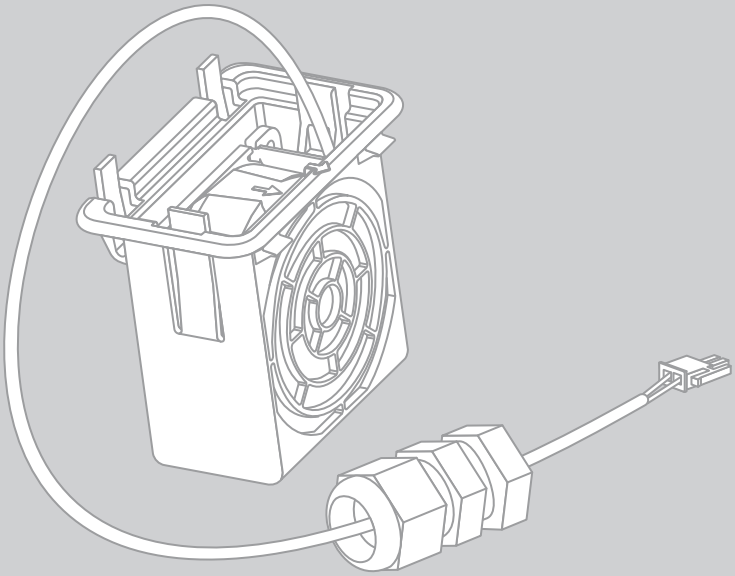
Accessories for SMA Inverters

Fan Retrofit Kit FANKIT02-10

Installation Manual



FANKIT02-IA-US_en-12 | Version 1.2

CA US

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SMA America, LLC

3801 N. Havana Street

Denver, CO 80239 U.S.A.

SMA Solar Technology Canada Inc.

2425 Matheson Blvd. E

8th Floor

Mississauga, ON L4W 5K5

Canada

Important Safety Instructions

SAVE THESE INSTRUCTIONS

This manual contains important instructions for the following products:

- Sunny Boy 3000TL-US (SB 3000TL-US-22)
- Sunny Boy 3800TL-US (SB 3800TL-US-22)
- Sunny Boy 4000TL-US (SB 4000TL-US-22)
- Sunny Boy 5000TL-US (SB 5000TL-US-22)
- Sunny Boy 6000TL-US (SB 6000TL-US-22)
- Sunny Boy 7700TL-US (SB 7000TL-US-22)
- Sunny Boy 7700TL-US (SB 7700TL-US-22)

This manual must be followed during installation and maintenance.

The product is designed and tested according to international safety requirements, but as with all electrical and electronic equipment, certain precautions must be observed when installing and/or operating the product. To reduce the risk of personal injury and to ensure the safe installation and operation of the product, you must carefully read and follow all instructions, cautions and warnings in this manual.

Warnings in this document

A warning describes a hazard to equipment or personnel. It calls attention to a procedure or practice, which, if not correctly performed or adhered to, could result in damage to or destruction of part or all of the SMA equipment and/or other equipment connected to the SMA equipment or personal injury.

Symbol	Description
⚠ DANGER	DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.
⚠ WARNING	WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.
⚠ CAUTION	CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
NOTICE	NOTICE is used to address practices not related to personal injury.

Warnings on this product

The following symbols are used as product markings with the following meanings.

Symbol	Description
	Warning regarding dangerous voltage The product works with high voltages. All work on the product must only be performed as described in the documentation of the product.
	Beware of hot surface The product can become hot during operation. Do not touch the product during operation.
	Electric arc hazards The product has large electrical potential differences between its conductors. Arc flashes can occur through air when high-voltage current flows. Do not work on the product during operation.
	Risk of Fire Improper installation of the product may cause a fire.
	Observe the operating instructions Read the documentation of the product before working on it. Follow all safety precautions and instructions as described in the documentation.

General Warnings

⚠ WARNING

General Warnings

All electrical installations must be made in accordance with the local and *National Electrical Code*® ANSI/NFPA 70 or the *Canadian Electrical Code*® CSA C22.1. This document does not and is not intended to replace any local, state, provincial, federal or national laws, regulation or codes applicable to the installation and use of the product, including without limitation applicable electrical safety codes. All installations must conform with the laws, regulations, codes and standards applicable in the jurisdiction of installation. SMA assumes no responsibility for the compliance or noncompliance with such laws or codes in connection with the installation of the product.

The product contains no user-serviceable parts.
For all repair and maintenance, always return the unit to an authorized SMA Service Center.

Before installing or using the product, read all of the instructions, cautions, and warnings in this manual.

Before connecting the product to the electrical utility grid, contact the local utility company. This connection must be made only by qualified personnel.

Wiring of the product must be made by qualified personnel only.

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1 Information on this Document

Validity

This document is valid for the fan retrofit kit type "FANKIT02-10".

Target Group

This document is intended for qualified persons. Only qualified personnel with the appropriate skills are allowed to perform the tasks described in this document (see Section 2.2 "Skills of Qualified Persons", page 9).

Additional Information

Links to additional information can be found at www.SMA-Solar.com:

Document title	Document type
SUNNY BOY 3000TL-US SUNNY BOY 3800TL-US SUNNY BOY 4000TL-US SUNNY BOY 5000TL-US SUNNY BOY 6000TL-US SUNNY BOY 7000TL-US SUNNY BOY 7700TL-US	Installation manual

Symbols

Symbol	Explanation
i	Indicates information that is important for a specific topic or objective, but is not safety-relevant
☐	Indicates a requirement for meeting a specific goal
☑	Desired result
✖	A problem that could occur

Nomenclature

Complete designation	Designation in this document
PV plant	PV plant
SMA America Production, LLC	SMA
SMA Solar Technology Canada Inc.	SMA
Sunny Boy	Inverter, product

2 Safety

2.1 Intended Use

The fan retrofit kit provides supplementary cooling for inverters operating at high ambient temperatures. The fan retrofit kit is authorized for use with the following inverters only:

- Sunny Boy 3000TL-US (SB 3000TL-US-22)
- Sunny Boy 3800TL-US (SB 3800TL-US-22)
- Sunny Boy 4000TL-US (SB 4000TL-US-22)
- Sunny Boy 5000TL-US (SB 5000TL-US-22)

For the following inverters the fan retrofit kit serves as a spare part for the standard fan:

- Sunny Boy 6000TL-US (SB 6000TL-US-22)
- Sunny Boy 7000TL-US (SB 7000TL-US-22)
- Sunny Boy 7700TL-US (SB 7700TL-US-22)

Any other uses not recommended by SMA are not permitted.

For safety reasons, it is not permitted to modify the product or install components that are not explicitly recommended or distributed by SMA for this product.

The enclosed documentation is an integral part of this product.

- Read and observe the documentation.
- Keep the documentation in a convenient place for future reference.

The fan retrofit kit may only be used in accordance with the specifications of the attached manual. Any other use can result in personal injury or property damage. Also observe the relevant inverter manual.

2.2 Skills of Qualified Persons

The tasks described in this document must be performed by qualified persons only. Qualified persons must have the following skills:

- Knowledge of how an inverter works and is operated
- Training in how to deal with the dangers and risks associated with installing and using electrical devices and plants
- Training in the installation and commissioning of electrical devices and plants
- Knowledge of all applicable standards and directives
- Knowledge of and adherence to this document and all safety precautions

2.3 Safety Precautions

⚠ DANGER

Danger to life from electric shock due to high voltages in the inverter

High voltages that can cause fatal electric shocks are present in the live components of the inverter.

- All work on the inverter must be carried out by qualified persons only.
- Prior to performing any work on the inverter, disconnect the inverter on the AC and DC sides (see inverter installation manual).
- Always operate the inverter with the enclosure lid closed.

Danger to life from electric shock due to damaged devices

Operating a damaged inverter can lead to hazardous situations that result in death or serious injuries due to electric shock.

- Operate the inverter only if it is technically safe and in full working order.
- Check the inverter regularly for visible damage.
- Operate the inverter only if there is no visible damage.

⚠ CAUTION

Risk of burns from hot surfaces

The surface of the inverter can get very hot. Touching the surface can lead to burns.

- Do not touch hot surfaces.
- During operation, do not touch any parts other than the lower enclosure lid of the inverter.
- Observe the safety messages on the inverter.

NOTICE

Electrostatic discharge can damage the inverter

Touching electronic components can cause damage to or destroy the inverter through electrostatic discharge.

- Ground yourself before touching any components.
- Do not open the upper enclosure lid.

i Observe local regulations

All electrical installations must be made in accordance with the electrical standards applicable on-site and the *National Electrical Code*® (ANSI/NFPA 70). Installations in Canada must be carried out in accordance with the applicable Canadian standards.

3 Scope of Delivery

Check the scope of delivery for completeness and any externally visible damage. Contact your specialty retailer if the scope of delivery is incomplete or damaged.

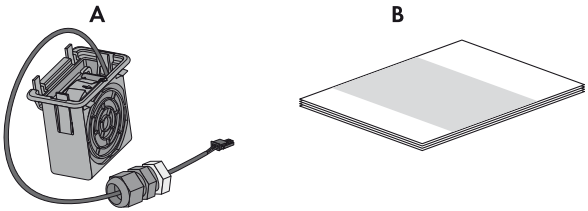


Figure 1: Components included in the scope of delivery

Item	Quantity	Designation
A	1	Fan with fan casing, cable and cable gland
B	1	Installation manual

4 Product Description

The fan retrofit kit provides supplementary cooling for inverters operating at high ambient temperatures.

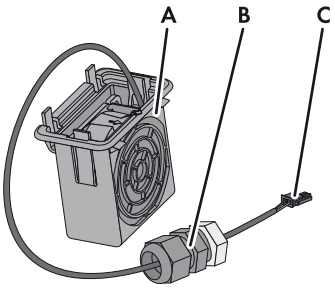


Figure 2: Design of the fan retrofit kit

Item	Designation
A	Fan with fan casing*
B	Cable gland with nut
C	Plug

*The fan guard is not required for Sunny Boy 7000/7700TL-US.

Symbol on the Product

Symbol	Designation	Explanation
	Beware of dangerous voltage	The product operates at high voltages. All work must be carried out by qualified persons only and in accordance with this document.

5 Installation

Installation varies depending on the inverter model. Identify the inverter by its type label in order to follow the correct procedure.

5.1 Sunny Boy 3000/3800/4000/5000/6000TL-US

5.1.1 Installation Area Overview

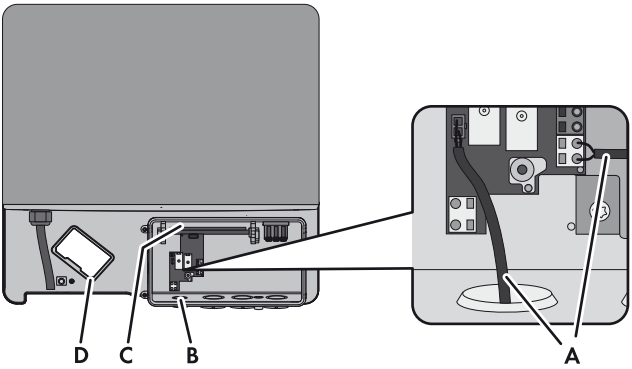
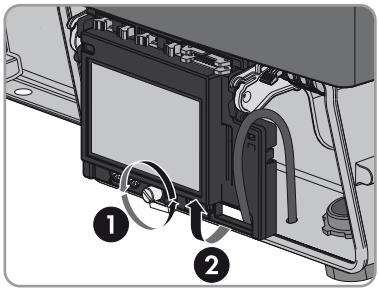


Figure 3: Installation area in the inverter with the lower enclosure lid open and the display flipped up

Item	Designation
A	Cable route
B	Enclosure opening for connection of the fan retrofit kit
C	Installation location for the controller assembly
D	Enclosure opening for fan with fan casing

5.1.2 Installing the Fan Retrofit Kit in the Inverter

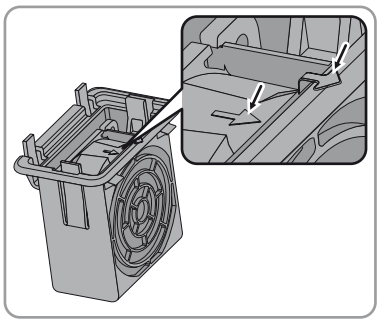
1. Disconnect the inverter from voltage sources (see the inverter installation manual).
2. Loosen the screws of the lower enclosure lid and remove the enclosure lid.
3. Loosen the screw on the display and flip the display up until it clicks into place.



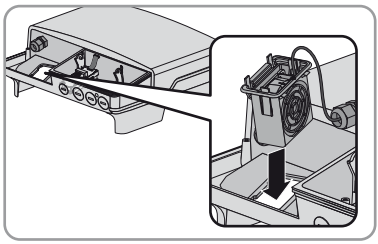
4. Remove the cover from the enclosure opening for the fan casing.

Correct airflow direction

5. Slide the fan into the fan guard. The arrows on the fan and the fan guard must point in the same direction one after the other.



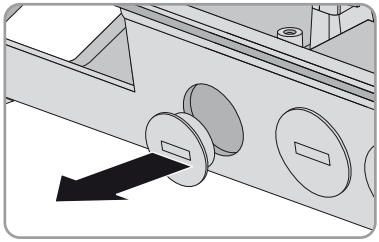
6. Insert the fan with fan casing into the enclosure opening. The arrow on the fan casing must point towards the display.



7. Hook the locking tabs on the right-hand side of the fan casing underneath the wall of the enclosure and press the fan with fan casing into the enclosure opening.

   ☑ The left-hand locking tabs snap into place.

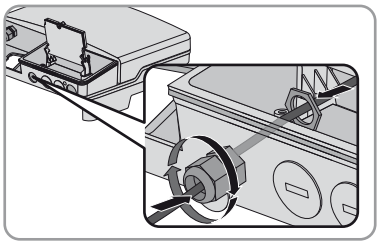
8. Remove the filler-plugs from left-hand enclosure opening.



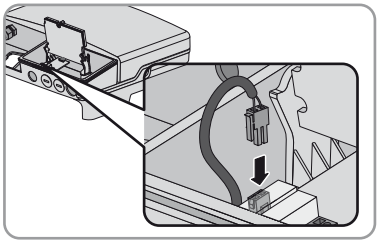
Retaining the filler-plug

Keep the filler-plug in a safe place. It may be needed again if the the fan retrofit kit is later removed from the inverter (see Section 6.1.1 "Disassembling the Fan Kit", page 19).

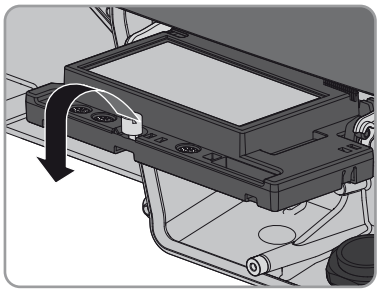
9. Unscrew the counternut from the supplied cable gland for the fan cable.
10. Insert the fan cable through the left-hand enclosure opening from the outside into the inverter.
11. Insert the fan cable gland in the enclosure opening and fasten from the inside to the enclosure using the counternut.



12. Fasten the swivel nut hand-tight.
13. Ensure that the fan cable is securely positioned.
14. Insert the fan plug into the fan connection of the emergency power module.



15. Flip the display down and fasten the screw hand-tight.



16. Close the inverter and recommission it (see the inverter installation manual).

5.2 Sunny Boy 7000/7700TL-US

5.2.1 Installation Area Overview

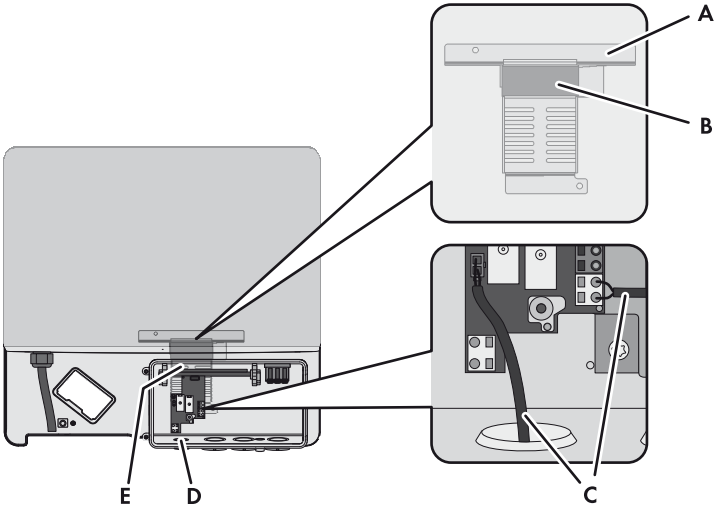
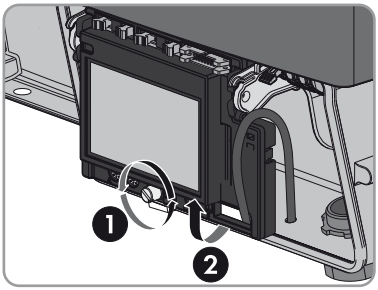


Figure 4: Installation area in and behind the inverter with the lower enclosure lid open and the display flipped up

Item	Designation
A	Fan guard on the rear side of the inverter
B	Fan on the rear side of the inverter
C	Cable route
D	Enclosure opening for connection of the fan retrofit kit
E	Installation location for the controller assembly

5.2.2 Installing the Fan to the Inverter

1. Disconnect the inverter from voltage sources (see the inverter installation manual).
2. Loosen the screws of the lower enclosure lid and remove the enclosure lid.
3. Loosen the screw on the display and flip the display up until it clicks into place.

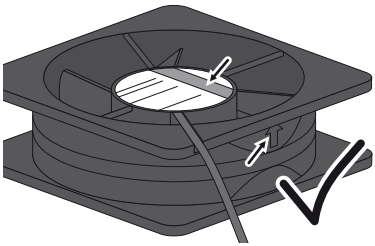


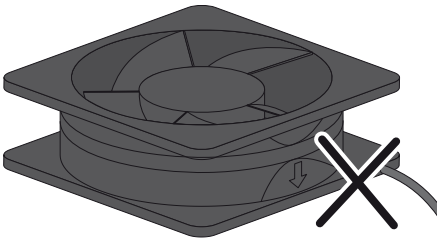
The fan guard is not required for Sunny Boy 7000/7700TL-US

4. Before installation push the fan out of the fan guard from the rear side.

Correct airflow direction

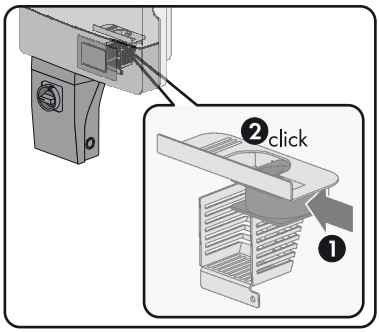
5. The arrow and type label on the fan must point upwards before installation.





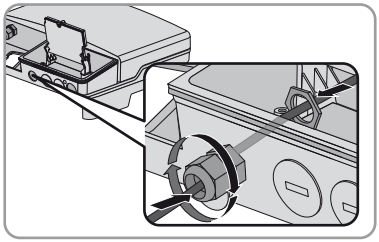
6. Grab behind the inverter from the bottom side. Slide the fan into the fan guard from the right-hand side.

   ☑ The fan snaps audibly into place.

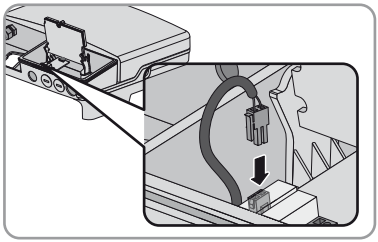


7. Unscrew the counternut from the supplied cable gland for the fan cable.

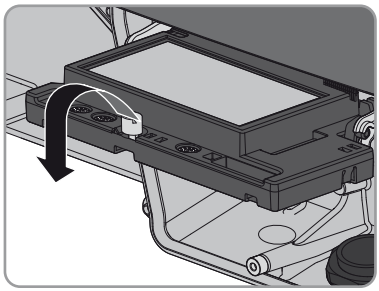
8. Insert the fan cable through the left-hand enclosure opening from the outside into the inverter.
9. Insert the fan cable gland in the enclosure opening and fasten from the inside to the enclosure using the counternut.



10. Fasten the swivel nut hand-tight.
11. Ensure that the fan cable is securely positioned.
12. Insert the fan plug into the fan connection of the emergency power module.



13. Flip the display down and fasten the screw hand-tight.



14. Close the inverter and recommission it (see the inverter installation manual).

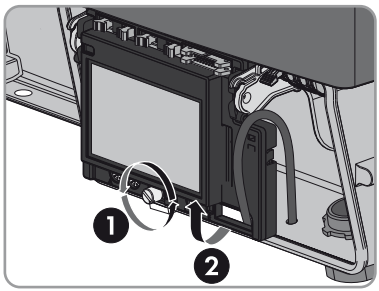
6 Disassembly

Disassembly differs depending on the inverter model. Identify the inverter by its type label in order to follow the correct procedure.

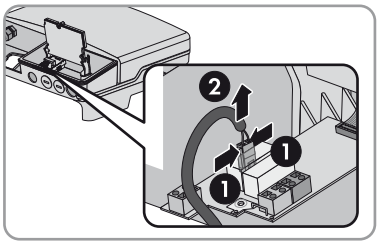
6.1 Sunny Boy 3000/3800/4000/5000/6000TL-US

6.1.1 Disassembling the Fan Kit

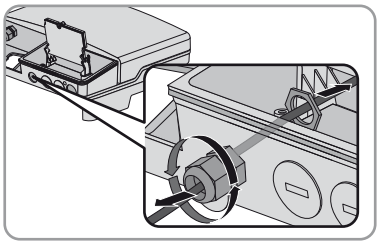
1. Disconnect the inverter from any voltage sources (see the inverter installation manual).
2. Loosen the screws of the lower enclosure lid and remove the enclosure lid.
3. Wait for the fan to stop rotating.
4. Loosen the screw on the display and flip the display up until it clicks into place.



5. Release and remove the fan plug.

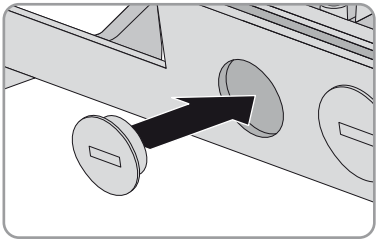


6. Loosen the fan cable gland. To do this, unscrew the inside counternut.

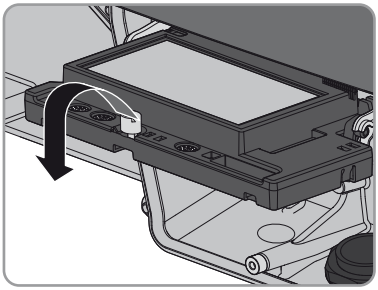


7. Remove the fan cable along with the cable gland and the nut from the inverter.

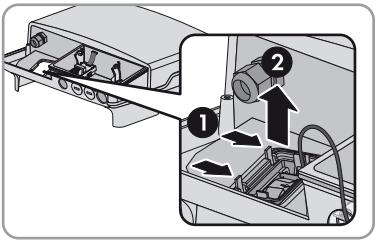
8. In case the fan is no longer needed:
   Insert the filler-plug into the left-hand enclosure opening.



9. Flip the display down and fasten the screw hand-tight.



10. Push both locking tabs of the fan casing towards the fan and remove the fan along with the fan casing.

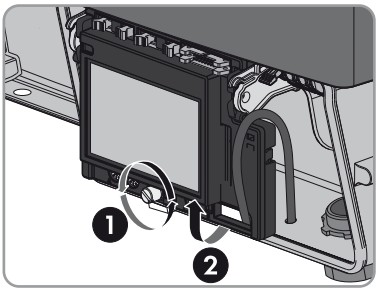


11. Close the inverter (see inverter installation manual).

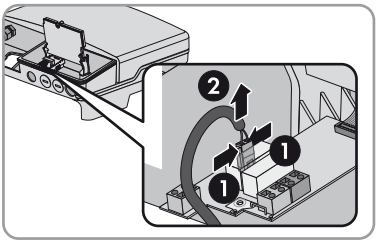
6.2 Sunny Boy 7000/7700TL-US

6.2.1 Disassembling the Fan

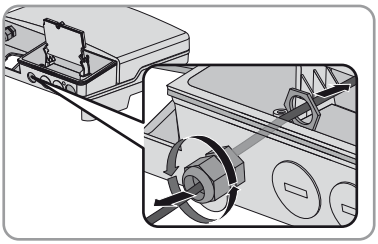
1. Disconnect the inverter from any voltage sources (see the inverter installation manual).
2. Loosen the screws of the lower enclosure lid and remove the enclosure lid.
3. Wait for the fan to stop rotating.
4. Loosen the screw on the display and flip the display up until it clicks into place.



5. Release and remove the fan plug.

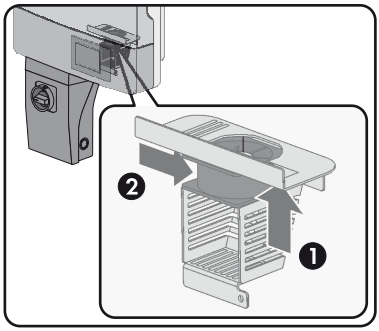


6. Loosen the fan cable gland. To do this, unscrew the inside counternut.



7. Remove the fan cable along with the cable gland and the nut from the inverter.

8. Grab behind the inverter from the bottom side. Push on the locking tab on the right next to the fan guard and at the same time slide the fan out from the left to the right side.



6.3 Disposing of the Fan Kit

- Dispose of the fan kit in accordance with the applicable disposal regulations for electronic waste.

7 Technical Data

7.1 Fan

General Data

Width x height x depth	60 mm x 60 mm x 25.4 mm
Noise emission (typical)	≤ 29 dB(A)
Maximum operating altitude	3,000 m
Volumetric flow rate	≥ 40 m^3/h

Electrical Parameters

Input voltage	0 V to15 V
Nominal DC current	≤ 0.2 A

Climatic Conditions

Temperature range	– 40°C to +60°C

8 Contact

If you have technical problems concerning our products, contact the SMA Service Line. We need the following data in order to provide you with the necessary assistance:

- Device type of the fan retrofit kit
- Device type and serial number of the inverter
- Detailed description of the problem

United States/ Estados Unidos	SMA America, LLC Rocklin, CA	+1 877-MY-SMATech (+1 877-697-6283)* +1 916 625-0870**
Canada/ Canadá	SMA Canada, Inc. Toronto	+1 877-MY-SMATech (+1 877-697-6283)***

* toll free for USA, Canada and Puerto Rico / Llamada gratuita en EE. UU., Canadá y Puerto Rico

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